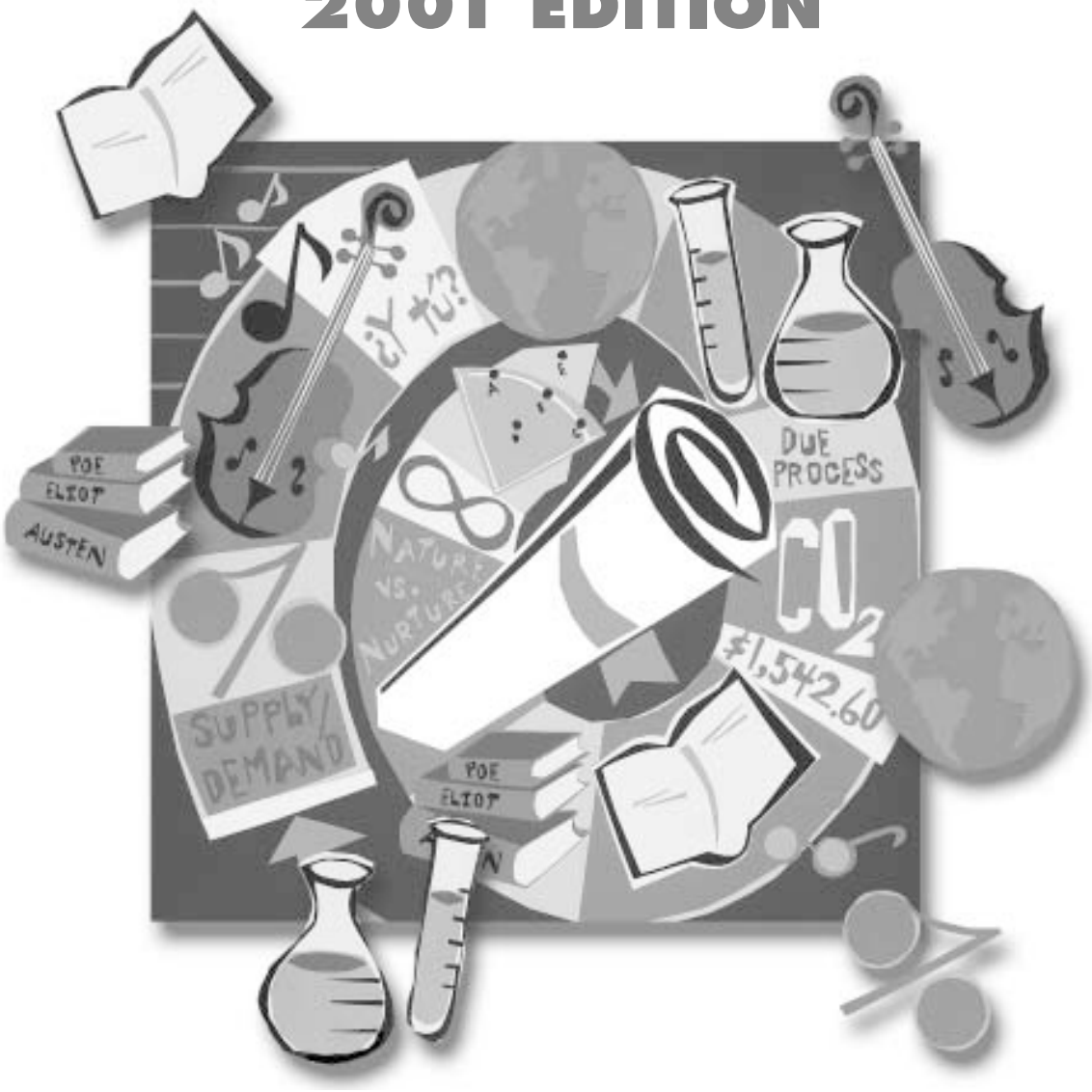
The College Board

CLEP®

OFFICIAL STUDY GUIDE
2001 EDITION



Visit our website at www.collegeboard.com/clep

COLLEGE-LEVEL EXAMINATION PROGRAM

Information Systems and Computer Applications

Description of the Examination

The Information Systems and Computer Applications exam covers material that is usually taught in an introductory college-level business course. Questions on the exam are about equally divided between those testing knowledge of terminology and basic concepts and those asking students to apply that knowledge. Although the exam assumes a general familiarity with information systems and computer applications, it does not emphasize the details of hardware design, language-specific programming techniques, or specific application packages. There are occasional references to applications such as word processing, spreadsheets, and data management, but questions that involve these applications do not draw heavily on one's knowledge of a specific product. Rather, the focus is on concepts and techniques applicable to a variety of products and environments.

The exam contains approximately 100 multiple-choice questions to be answered in two separately timed 45-minute sections.

Knowledge and Skills Required

Questions on the exam require candidates to demonstrate the following abilities in the approximate proportions indicated. A single question may require both abilities.

- Knowledge of terminology and basic concepts (about 50 percent of the exam)
- Application of knowledge (about 50 percent of the exam)

The subject matter of the Information Systems and Computer Applications exam is drawn from the following topics.

▼	*Approximate Percent of Examination*
15%	Computer Hardware and Its Functions
	Processing, storage, and I/O devices
	Data concepts and representation

➧	*Approximate Percent of Examination*

10% Computer Software
- Systems software
- Programming languages
- Standards

15% System Development Life Cycle
- System development life cycle methodologies
- Analysis/design tools and techniques

5% Computer Programming
- Program life cycle (analysis, design, coding, testing)
- Program design tools
- Programming logic (sequence, selection, repetition, case)

10% Data Management
- File organization (direct, sequential, indexed)
- Database concepts and models (hierarchical, network, relational)

10% Telecommunications
- Equipment and its functions
- Networks

20% Organizational and User Support Systems: Concepts and Applications
- Design support systems
- Artificial intelligence and expert systems
- Office systems (conferencing, voice mail, fax, electronic mail)
- End-user applications (word processing, spreadsheet, data management, graphics)

➧	*Approximate Percent of Examination*

10% Information Processing Management

- Types of information processing (batch, real-time, transaction)
- Controls in information processing (I/O, security, backup, recovery)
- Information processing careers

5% Social and Ethical Issues (economic, privacy, security, legal)

Sample Questions

The 25 sample questions given here are similar to questions on the Information Systems and Computer Applications exam, but they do not appear on the actual exam. CLEP exams are designed so that average students completing a course in the subject can usually answer about half the questions correctly.

Before attempting to answer the sample questions, read all the information about the Information Systems and Computer Applications exam on the preceding pages. Additional suggestions for preparing for CLEP exams are provided in Chapter 1.

Try to answer correctly as many questions as possible. Then compare your answers with the correct answers, given at the end of this examination guide.

Directions: Each of the questions or incomplete statements below is followed by five suggested answers or completions. Select the one that is best in each case.

1. In most computer languages, the absence of parentheses implies that the order of mathematical operation from highest to lowest precedence is

   (A) exponentiation, addition and subtraction, multiplication and division
   (B) addition and subtraction, multiplication and division, exponentiation
   (C) multiplication and division, exponentiation, addition and subtraction
   (D) exponentiation, multiplication and division, addition and subtraction
   (E) exponentiation, multiplication, division, addition and subtraction

   Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ

2. The ability of computerized systems to store and exchange information represents a potential threat to our right of

   (A) free speech (B) assembly
   (C) equal access to information (D) privacy
   (E) consumer protection

   Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ

3. Should there be a power failure, the contents of RAM will be

   (A) automatically printed out
   (B) automatically saved on disk
   (C) displayed on the screen
   (D) lost
   (E) refreshed

   Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ

4. In a spreadsheet formula, what type of cell address is fixed and does not change when the formula is copied?

   (A) Relative address (B) Absolute address
   (C) Fixed address (D) Static address
   (E) Constant address

   Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ

5. Which of the following specifies running two or more programs concurrently on the same computer sharing the computer's resources?

   (A) Booting (B) Paging (C) Multiprogramming
   (D) Multiprocessing (E) Thrashing

   Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ

6. Which DBMS data model uses 2-dimensional tables to describe data structures?

   (A) Relational (B) Hierarchical
   (C) Network (D) Navigational
   (E) CODASYL

   Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ

7. Data values A and B are stored in memory locations X and Y, respectively. Which of the following is true after execution of an instruction that moves A to Y?

   (A) B is erased.
   (B) Y contains A, and X contains B.
   (C) A is eliminated from location X.
   (D) The sum A + B is stored at location Y.
   (E) Y contains A + B, and X contains B.

   Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ

8. The following pseudocode depicts the logic in a section of a computer program.

```
SET A TO 1
SET B TO 3
SET A TO A + B
WHILE A < 20
        SET A TO (A*A)/2
END WHILE
```

   The value of variable A following execution of the program segment is

   (A) 16 (B) 20 (C) 21 (D) 32 (E) 64

   Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ

9. Over which type of transmission line do data travel in both directions simultaneously?

   (A) Simplex (B) Half-duplex (C) Full-duplex
   (D) Double-duplex (E) Parallel-duplex

   Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ

10. Which of the following would NOT be used as an input device for a computer system?

    (A) Optical scanner (B) Tape drive (C) Hard disk
    (D) Floppy disk (E) Microfilm reader

    Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ

11. In many computers, input/output (I/O) devices are connected to primary storage by devices that enable I/O operations to overlap with CPU operations. These devices are called

    (A) buffers (B) channels (C) selectors
    (D) cables (E) busses

    Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ

12. If A = 4, B = 2, C = 6, and D = 2, then the execution of the statement

    X = A*B + C/D

    would set X to

    (A) 7 (B) 8 (C) 11 (D) 16 (E) 10

    Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ

13. Which of the statements concerning real-time processing is generally FALSE?

    (A) A real-time system requires online processing methods.
    (B) A real-time system requires sequential file access.
    (C) A real-time system requires online files.
    (D) A real-time processing operation is one in which all transactions are processed soon after they occur.
    (E) Real-time processing requires direct access storage.

    Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ

14. One responsibility that is NOT traditionally given to a beginning programmer is

    (A) coding (B) debugging (C) program testing
    (D) documentation (E) systems design

    Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ

15. The person responsible for establishing a data dictionary that standardizes data item definitions is usually the

    (A) systems analyst
    (B) applications programmer
    (C) data definition analyst
    (D) database administrator
    (E) librarian

    Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ

16. Pseudocode is frequently a useful aid in all of the following activities EXCEPT

(A) writing the program
(B) running the program
(C) debugging the program
(D) explaining the program to others who are not programmers
(E) making changes in the program after it is completed and checked out

Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ

17. In which phase of the system development life cycle is the user LEAST involved?

(A) Analysis (B) Design (C) Development
(D) Implementation (E) Maintenance

Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ

18. The use of a computer with a modem in the office allows for data communications to take place in which of the following forms?

I. Electronic mail
II. Computer conferencing
III. Voicemail

(A) I only (B) II only (C) III only
(D) I and II only (E) I, II, and III

Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ

19. The major difference between direct access storage devices and magnetic tape is that records on direct access devices

(A) are recorded serially
(B) can be of fixed or variable length
(C) can be blocked or unblocked
(D) can be accessed directly or sequentially
(E) are more easily verified

Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ

20. When applied to the development of computer systems, the term "ergonomics" means

    (A) designing computer systems to maximize the cost-benefit ratio
    (B) applying human factors principles to maximize the efficiency of the human-machine interface
    (C) following the systems development life cycle
    (D) fostering development team interaction through the use of computer-aided software engineering tools
    (E) optimizing the throughput rate by adjusting the operating system interrupts

    Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ

Study Resources

If you plan to obtain credit at a particular institution, check the textbooks that are currently being used in the relevant course; the exam is likely to be reasonably consistent with introductory information processing textbooks at most institutions. If you plan to prepare for the exam and have no specific institution in mind, visit a college bookstore and select a textbook from each of the two categories listed below.

- textbooks that deal with general computer concepts and applications software.
- textbooks that focus on information processing.

When selecting a textbook, you should check also the table of contents against the "Knowledge and Skills Required" section on pages 1-3. The Internet is another resource you could explore.

Additional suggestions for preparing for CLEP exams appear in Chapter 1.

Answers to Sample Questions

Information Systems and Computer Applications

1. D
2. D
3. D
4. B
5. C
6. A
7. A
8. D
9. C
10. E
11. B
12. C
13. B
14. E
15. D
16. B
17. C
18. D
19. D
20. B